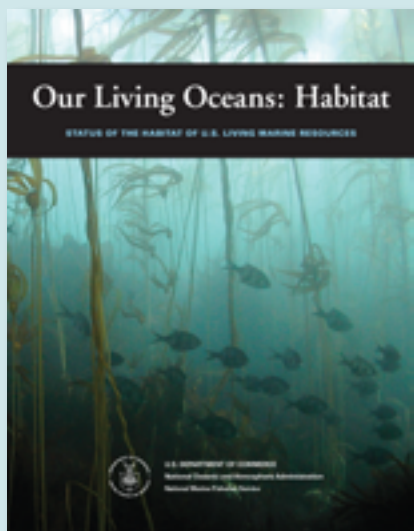


NOAA FISHERIES

*“One of the greatest long-term threats to the viability of commercial and recreational fisheries is the continuing loss of marine, estuarine, and other aquatic habitats. **Habitat considerations should receive increased attention for the conservation and management of fishery resources of the United States.**”*

- Magnuson-Stevens Act



Our Living Oceans: Habitat

NOAA Fisheries announces the release of *Our Living Oceans: Habitat*. This report provides the first comprehensive summary of habitat use and information for managed marine species in the United States, including details on U.S. habitat science, trends, issues, and research. This, the third installment of the *Our Living Oceans* series, highlights the need for more information about habitat - where it is, how it is changing, and how it relates to fisheries productivity - and the steps NOAA is taking to protect and restore vital habitats around the country.



Examples of the four habitat categories: upper left, freshwater habitat (Alaskan stream); upper right, estuarine habitat (Grand Bay, Mississippi); lower left, shallow marine habitat (Point Dume, California); lower right, oceanic habitat (Atlantic Ocean).

Habitat - the place where species live - plays a fundamental role in supporting the production of fishery and protected marine stocks and the ecosystems on which they all depend. However, this role is often poorly understood. Healthy aquatic habitats benefit fish and protected species, commercial and recreational fisheries, and can help protect coastal communities. Demands and impacts on habitats are growing, with potentially large and far-reaching effects on productivity of our living marine resources.

One of NOAA's goals is to protect and conserve the habitat of our nation's managed and protected species. Having the necessary tools and scientific information to complete this mission effectively is of the utmost importance. The Habitat Blueprint provides a framework to guide habitat management across NOAA programs. The Habitat Assessment Improvement Plan (HAIP) defines NMFS' unique role in pursuing habitat science and in developing habitat assessments to meet its mandated responsibility to sustain marine fisheries and associated essential fish habitats (EFH).

Habitat Categories

1. **Freshwater:** Between headwater and head-of-tide; negligible salinity.
2. **Estuarine:** From the head-of-tide to a free connection with the open sea where seawater mixes with fresh water; variable salinity.
3. **Shallow marine:** Less than 200 m (656 ft) depth; between the estuary boundary/coast and the boundary of the U.S. Exclusive Economic Zone (EEZ).
4. **Oceanic:** Greater than 200 m (656 ft) depth; located within the U.S. EEZ.

NOAA's Habitat Blueprint:

A framework to think and act strategically to conserve, protect, and create healthy habitats that sustain resilient and thriving marine resources. A three-pronged approach:

Habitat Focus Areas

Regional collaborations between NOAA and external partners to address multiple habitat objectives.

Habitat Science

Implementing a systematic and strategic science program to guide effective decision-making.

Habitat Conservation

Strengthening policy and legislation to achieve habitat conservation results.

Habitat Assessment Improvement Plan (HAIP):

The HAIP defines NOAA Fisheries' unique role in pursuing habitat science and developing habitat assessments to meet its mandated responsibility to sustain marine fisheries and associated habitats.

The HAIP establishes NOAA Fisheries' framework to coordinate its diverse habitat research, monitoring, and assessments, guiding the development of budget alternatives and increased support for habitat science.

The HAIP's scope focuses on managed stocks and stock complexes within fishery management plans.

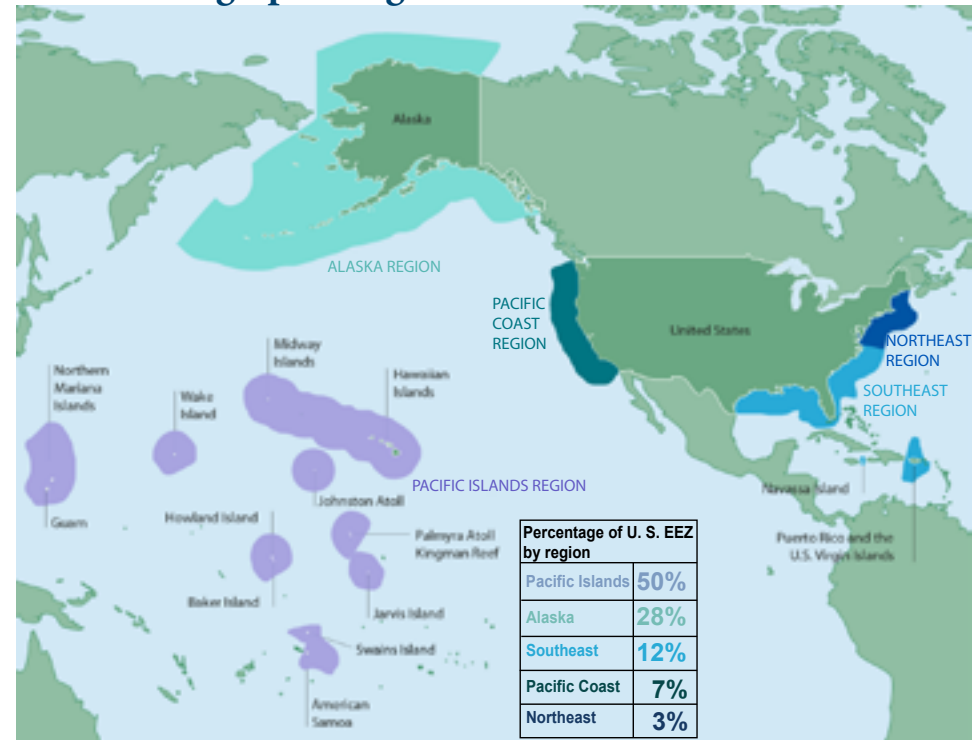
The conclusions and recommendations of the HAIP can be applied more broadly to other managed and protected species.

Habitat Use, Pattern, Trends, Status

Not all aquatic habitats are used equally - over 95% of the nation's Fishery Management Plans (FMPs) include species that use shallow marine and oceanic habitats, followed by estuaries (82%), and freshwater (16%). Many fishery species use multiple habitats during their life cycles. Estuaries in particular are important habitats for juvenile stages and for non-FMP species that serve as food for managed stocks (often called "forage species").

The status and trends of habitats vary widely across regions and types due to differences in socioeconomic and historical factors, as well as physical factors such as weather, climate, and oceanography.

The Five Geographic Regions of the U. S. EEZ



The U. S. exclusive economic zone (EEZ) extends from state waters, 4.8 km (3nmi) from shore, to 370 km (200 nmi) from the coast. Within this area, the U. S. has sovereign rights and authority over all resources.

Habitat Issues

Living marine resources depend on having sufficient quality and quantity of habitat. Some national issues that can impact marine habitats include: water quality and quantity, fisheries activities, invasive species, harmful algal blooms, and habitat fragmentation and loss. Global habitat issues attributable to climate change include: rising ocean temperatures, sea level rise and subsequent inundation of low-lying habitats, ocean acidification and hypoxia, loss of sea ice, and severe alterations to weather patterns and possibly to ocean circulation.

Examples of issues by habitat type:

Freshwater: Agricultural runoff, residential development, and alteration of rivers, migratory pathways and freshwater flows.

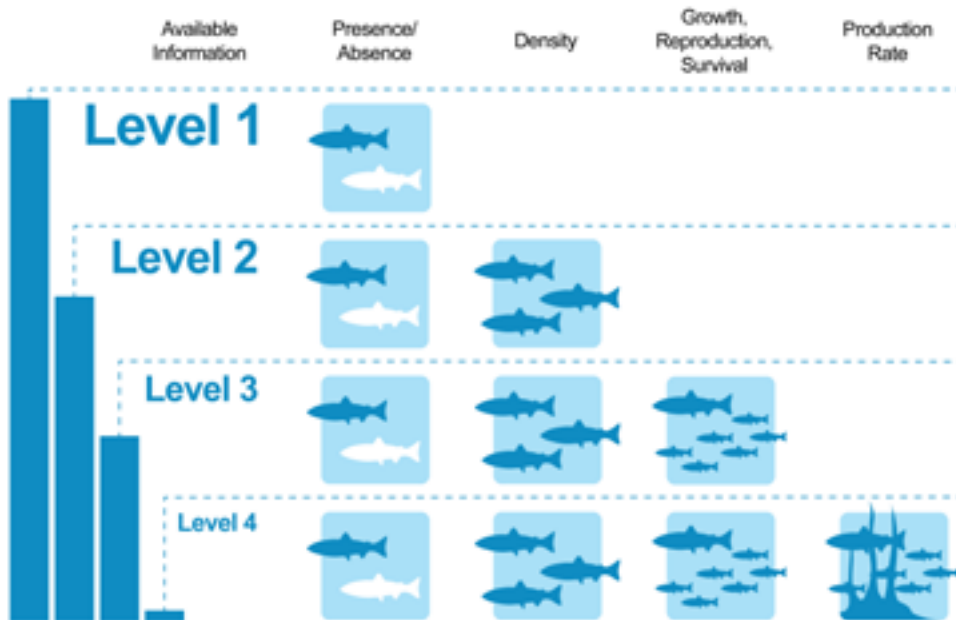
Estuaries: Excess nutrient inputs that cause eutrophication, elevated turbidity, and reduced oxygen concentrations.

Marine - Shallow & Oceanic: Destructive fishing practices, marine debris, and vessel traffic and noise.

Habitat Research Needs

Key questions remain unanswered regarding species-habitat linkages (e.g. habitat use by different life stages of fishery and protected species), habitat mapping and delineation, and essential fish (EFH) habitat requirements. Gaps in our habitat knowledge span all regions and most managed species, and compromise the ability of managers to protect and restore habitats and maximize yield.

For essential fish habitat (EFH) information, the highest quality (level) is important to managers. Currently, the quantity of information decreases at each successive level.



Level 1 - Distribution data are available for some or all portions of the geographic range.

Level 2 - Habitat-related densities are available.

Level 3 - Growth, reproduction, or survival rates within habitats are available.

Level 4 - Production rates by habitat type are available.

Habitat Protection and Restoration

Habitat protection and restoration can help conserve and rebuild fishery and protected stocks. Protecting habitat maintains existing functions and prevents further losses, while restoration repairs habitat that is degraded or creates new habitats.

Some of NOAA's habitat protection efforts:

- Fishery Management Actions (e.g. bottom trawl restrictions, area closures)
- Provide recommendations to reduce impacts from federal permitting activities on essential fish habitat (EFH) and Habitat Areas of Particular Concern.
- Marine protected areas (e.g. National Marine Sanctuaries, National Estuarine Research Reserves)

Some of NOAA's habitat restoration efforts:

- Repairing damage (e.g. replanting seagrass)
- Replacing lost habitat function (e.g. creating an artificial reef)
- Re-establishing condition prior to human alterations (e.g. dam removals; marine protected areas)

Laws to Protect Habitat

Magnuson-Stevens Fishery Conservation and Management Act (MSA): primary law governing marine fisheries management in U. S. federal waters; promotes protection of essential fish habitat (EFH).

Endangered Species Act (ESA): law to conserve endangered and threatened species; also requires the critical habitat of those species be protected.

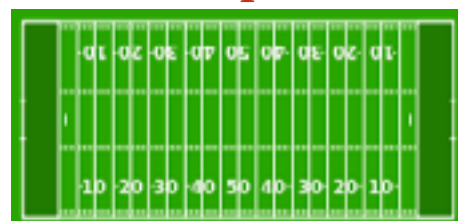
Marine Mammal Protection Act (MMPA): law to create moratorium on the taking of marine mammals in U. S. waters; seeks to ensure that marine mammal species and population stocks continue to be significant functioning elements of their ecosystems.

Coastal Wetlands

Habitat fragmentation and loss are the primary issues facing wetland habitats. Coastal wetlands comprise about 1/3 of all U. S. continental wetlands and include marshes, swamps, mangrove forests, and seagrass beds. Although federal and state laws and policies have reduced wetland loss significantly, it remains a significant problem in coastal areas.

Two reports published jointly by NOAA and the U. S. Fish and Wildlife Service concluded that coastal wetland loss is substantial - about **seven football fields per hour**. Human activities, such as development, are a primary cause.

Loss of 7 per hour



Research Needs

1. Conduct life history studies (including studies of age, growth, maturity, and fecundity) in relation to habitat for all managed and protected species.
2. Determine productivity by life stage and habitat type for managed and protected species.
3. Determine essential habitat requirements for each life stage.
4. Characterize and describe benthic and open-ocean habitats and associated species assemblages on spatial scales relevant to fisheries management and conservation.
5. Map and quantify important habitats.
6. Determine the direct and indirect effects of climate change and ocean acidification, severe storms and sea level rise, toxic algal blooms, and fishing on the habitats of managed and protected species.
7. Develop methods to reduce practices damaging to important habitats.
8. Improve understanding of the effects of underwater sound on marine mammals.
9. Monitor changes in habitat quality, quantity and use.
10. Develop and test practical methods to protect and restore habitat for fishery and protected species.
11. Evaluate approaches for habitat conservation and protection, including marine protected areas.
12. Develop advanced methods and technologies for remote sensing and autonomous platforms for oceanography and stock and habitat assessment.
13. Determine societal and economic benefits of conserving and restoring specific habitats.

Learn More

Questions? Find out more here:

To download an electronic copy of the *OLO: Habitat*, visit:
<http://st.nmfs.noaa.gov/ecosystems/habitat/plans/olohabitat/index>

NOAA Fisheries
Office of Science & Technology:
<http://www.st.nmfs.noaa.gov>

NOAA Fisheries
Office of Habitat Conservation:
<http://www.habitat.noaa.gov>

NOAA Fisheries Habitat
Assessment Improvement Plan
(HAIP)
<https://www.st.nmfs.noaa.gov/Assets/ecosystems/habitat/pdf/>

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